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UNITED STATES NAVAL OBSERVATORY
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U. S. Naval Observatory, Washington 25, D. C.

March 1, 1954

SOLAR SUMMARY FOR 1953

The solar circulars which give the daily results of sunspot measures made at the U. S. Naval Observatory have been printed with the aid of punched cards since January 1950. These cards have also been used to compile the Summary for 1953.

Table I gives the mean values of A , g , s , and r for each month, and for the year.

Table II gives the same quantities for each day.

Table IIIa summarizes for each day the results for each group which was numbered at Mount Wilson. The first line contains the group number. The other lines list, for the entire group, in the successive columns:

1. Date of observation: the month, day, and decimal of a day in U. T.
2. The mean heliographic longitude, L .
3. The mean heliographic latitude, φ .
4. The total area, A .
5. The total spot count, s .
6. The number of parts, p , which were listed separately in the monthly circulars.

The quantities L and φ are the unweighted means of the several parts. Hence, the appearance or disappearance of a small spot may affect the day-to-day values of L and φ . Similarly, there may be apparent changes in these quantities when the group is near the limb and the measures are uncertain.

Table IIIb gives similar data for the unnumbered groups, that is, those marked by an asterisk in the monthly circulars. These groups generally consisted of a small spot which appeared on one day.

Table IV lists groups which may be recurrent. The data are derived from the Mount Wilson results given in the *Publications of the Astronomical Society of the Pacific*, which should be consulted for details on the recurrences.

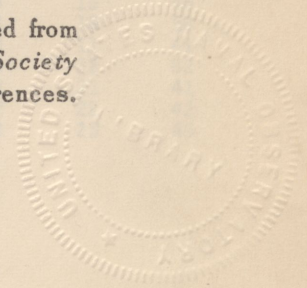


TABLE I MONTHLY SUMMARY

	<i>A</i>	<i>g</i>	<i>s</i>	<i>r</i>
JANUARY	356	2.4	16	40
FEBRUARY	16	0.5	1	6
MARCH	81	0.9	3	12
APRIL	490	2.0	11	31
MAY	209	1.0	3	13
JUNE	272	1.7	10	27
JULY	122	0.6	2	8
AUGUST	324	1.8	8	26
SEPTEMBER	181	2.2	4	26
OCTOBER	66	0.7	3	10
NOVEMBER	12	0.4	1	5
DECEMBER	11	0.3	1	4
Mean	178	1.2	5	17



TABLE II DAILY SUMMARY

Date	A	g	s	r	Date	A	g	s	r
JANUARY					MARCH				
1	101	1	3	13	1	0	0	0	0
2	145	1	1	11	2	0	0	0	0
3	430	2	19	39	3	0	0	0	0
4	339	2	24	44	4	36	1	4	14
5	508	2	7	27	5	0	0	0	0
6	776	3	8	38	6	0	0	0	0
8	767	6	43	103	7	0	0	0	0
9	833	4	72	112	8	0	0	0	0
10	1040	4	67	107	9	0	0	0	0
11	805	4	71	111	10	0	0	0	0
12	721	4	30	70	11	0	0	0	0
13	860	4	30	70	13	24	1	1	11
14	738	4	23	63	14	30	1	3	13
15	488	4	18	58	15	0	0	0	0
16	574	4	13	53	16	0	0	0	0
17	518	4	30	70	17	0	0	0	0
18	233	4	12	52	18	193	1	2	12
19	224	3	6	36	19	115	2	6	26
20	242	2	2	22	20	48	1	1	11
21	113	2	7	27	21	103	1	5	15
22	145	2	3	23	22	64	1	1	11
23	24	1	1	11	23	36	1	2	12
24	32	1	1	11	24	48	1	2	12
25	0	0	0	0	25	36	1	1	11
26	0	0	0	0	26	0	0	0	0
27	0	0	0	0	27	203	4	7	47
28	6	1	1	11	28	230	3	7	37
29	18	2	3	23	30	563	4	16	56
30	12	1	1	11	31	617	4	19	59
31	0	0	0	0					
FEBRUARY					APRIL				
1	0	0	0	0	1	556	3	17	47
2	48	1	1	11	2	559	3	27	57
3	73	1	2	12	3	541	5	21	71
4	54	2	3	23	4	563	6	27	87
5	48	1	2	12	5	423	4	12	52
6	48	1	1	11	6	249	3	15	45
7	56	2	2	22	7	392	4	28	68
8	24	1	1	11	8	472	2	6	26
9	60	3	3	33	9	448	2	5	25
10	24	1	1	11	10	461	2	6	26
11	28	2	6	26	11	291	1	1	11
12	0	0	0	0	12	0	0	0	0
13	0	0	0	0	13	0	0	0	0
14	0	0	0	0	14	0	0	0	0
15	0	0	0	0	15	0	0	0	0
16	0	0	0	0	16	0	0	0	0
17	0	0	0	0	17	0	0	0	0
18	0	0	0	0	18	6	1	4	14
19	0	0	0	0	19	0	0	0	0
20	0	0	0	0	20	0	0	0	0
21	0	0	0	0	21	145	1	1	11
22	0	0	0	0	22	242	1	1	11
23	0	0	0	0	23	896	2	8	28
24	0	0	0	0	24	1001	3	16	46
25	0	0	0	0	25	797	4	18	58
26	0	0	0	0	26	933	3	11	41
27	0	0	0	0	27	1360	5	32	82
28	0	0	0	0	28	1402	2	21	41
					29	1381	2	22	42
					30	1575	2	25	45

TABLE II DAILY SUMMARY

Date	A	g	s	r	Date	A	g	s	r
MAY									
1	1364	2	16	36	2	16	1	1	11
2	1015	4	7	47	3	12	1	1	11
3	1236	2	5	25	4	0	0	0	0
4	85	1	1	11	5	0	0	0	0
5	91	2	2	22	6	0	0	0	0
6	121	1	1	11	7	0	0	0	0
7	97	1	1	11	8	0	0	0	0
8	0	0	0	0	9	485	1	1	11
9	0	0	0	0	10	497	2	3	23
10	0	0	0	0	11	436	1	3	13
11	0	0	0	0	12	297	1	10	20
12	0	0	0	0	13	339	1	3	13
13	0	0	0	0	14	425	2	10	30
14	0	0	0	0	15	413	1	5	15
15	0	0	0	0	16	233	1	7	17
17	40	1	3	13	17	190	1	5	15
18	6	1	1	11	18	194	2	4	24
19	291	1	5	15	19	113	1	2	12
20	267	1	2	12	20	120	1	4	14
21	218	1	3	13	21	6	1	1	11
22	145	1	2	12	22	0	0	0	0
23	157	1	2	12	23	0	0	0	0
24	181	1	2	12	24	0	0	0	0
26	121	1	1	11	25	0	0	0	0
27	181	1	6	16	26	0	0	0	0
28	137	2	6	26	27	0	0	0	0
29	115	2	5	25	28	0	0	0	0
30	182	2	6	26	29	0	0	0	0
31	12	1	2	12	30	0	0	0	0
					31	0	0	0	0
JUNE					AUGUST				
2	477	3	15	45	1	0	0	0	0
3	428	2	14	34	2	97	1	1	11
4	659	2	31	51	3	181	1	4	14
5	604	2	17	37	4	113	1	10	20
6	579	2	16	36	5	44	1	3	13
7	548	2	22	42	6	16	1	1	11
8	423	2	18	38	7	44	1	3	13
9	509	2	6	26	8	246	3	5	35
10	434	2	13	33	9	235	3	13	43
11	95	2	5	25	10	461	4	19	59
12	24	1	1	11	11	977	6	13	73
13	73	1	1	11	12	1065	5	14	64
14	459	3	14	44	13	994	5	32	82
15	330	2	24	44	14	760	4	62	102
16	350	2	24	44	15	964	3	21	51
18	206	1	4	14	16	993	3	15	45
19	327	2	6	26	17	605	3	9	39
20	314	2	8	28	18	514	3	6	36
21	193	2	4	24	19	460	3	3	33
22	127	1	5	15	20	428	2	2	22
23	121	1	3	13	21	412	1	1	11
24	97	1	4	14	22	412	2	2	22
25	84	1	6	16	23	12	1	1	11
26	60	2	3	23	24	0	0	0	0
27	36	1	3	13	25	0	0	0	0
28	24	1	1	11	26	0	0	0	0
29	12	1	1	11	27	0	0	0	0
30	12	1	1	11	28	0	0	0	0
					29	0	0	0	0
JULY					30	0	0	0	0
1	0	0	0	0	31	0	0	0	0

TABLE II DAILY SUMMARY

Date	A	g	s	r	Date	A	g	s	r
SEPTEMBER					NOVEMBER				
1	18	2	3	23	1	97	1	5	15
2	24	1	2	12	2	61	1	2	12
3	6	1	1	11	3	78	3	3	33
4	6	1	1	11	4	16	1	1	11
5	24	1	3	13	5	16	1	1	11
6	345	3	4	34	6	30	2	5	25
7	351	3	4	34	7	0	0	0	0
8	234	3	5	35	8	0	0	0	0
9	254	2	2	22	9	0	0	0	0
10	351	2	4	24	10	0	0	0	0
11	226	2	2	22	11	0	0	0	0
12	290	4	5	45	12	0	0	0	0
13	351	3	5	35	13	0	0	0	0
14	419	4	16	56	14	0	0	0	0
15	435	4	11	51	15	0	0	0	0
16	545	4	13	53	16	0	0	0	0
17	465	4	9	49	17	0	0	0	0
18	290	4	6	46	18	0	0	0	0
19	236	4	10	50	19	0	0	0	0
20	109	3	5	35	20	0	0	0	0
21	85	2	2	22	21	0	0	0	0
22	73	1	1	11	22	0	0	0	0
23	61	1	1	11	23	0	0	0	0
24	109	2	3	23	24	0	0	0	0
25	48	2	3	23	25	52	2	3	23
26	36	2	2	22	26	0	0	0	0
27	40	1	2	12	27	0	0	0	0
28	0	0	0	0	28	0	0	0	0
29	0	0	0	0	29	0	0	0	0
30	0	0	0	0	30	0	0	0	0
OCTOBER					DECEMBER				
1	0	0	0	0	1	0	0	0	0
2	0	0	0	0	2	0	0	0	0
3	18	1	5	15	3	0	0	0	0
4	24	1	2	12	4	0	0	0	0
5	6	1	1	11	5	0	0	0	0
6	163	1	8	18	6	22	1	6	16
7	89	1	5	15	7	24	1	1	11
8	121	1	3	13	8	48	1	1	11
9	60	1	4	14	9	0	0	0	0
10	0	0	0	0	10	0	0	0	0
11	12	1	1	11	11	0	0	0	0
12	46	2	5	25	12	0	0	0	0
13	171	2	7	27	13	0	0	0	0
14	318	1	16	26	14	0	0	0	0
15	509	1	16	26	15	0	0	0	0
16	218	1	4	14	16	0	0	0	0
17	103	1	2	12	17	0	0	0	0
18	6	1	1	11	18	0	0	0	0
19	0	0	0	0	19	0	0	0	0
20	0	0	0	0	20	0	0	0	0
21	0	0	0	0	21	0	0	0	0
22	0	0	0	0	22	0	0	0	0
23	18	1	2	12	23	0	0	0	0
24	0	0	0	0	24	36	1	1	11
25	0	0	0	0	25	12	1	2	12
26	36	1	3	13	26	60	1	7	17
27	54	1	2	12	27	0	0	0	0
28	18	1	2	12	28	64	1	6	16
29	0	0	0	0	29	34	1	5	15
30	0	0	0	0	30	12	1	2	12
31	73	1	4	14	31	36	1	1	11

TABLE IIIa NUMBERED GROUP SUMMARY

No.	Date	<i>L</i>	φ	<i>A</i>	<i>s</i>	<i>p</i>	No.	Date	<i>L</i>	φ	<i>A</i>	<i>s</i>	<i>p</i>
		°	°						°	°			
11076	1 3,727	18	+21	291	2	1		1 16,598	284	-10	77	2	2
	1 4,709	22	+22	254	12	3		1 17,749	283	-9	64	13	4
	1 5,600	24	+19	242	2	1		1 18,736	284	-9	28	6	2
	1 6,598	23	+19	303	2	2		1 19,734	288	-8	18	3	2
	1 8,945	22	+20	352	32	6							
	1 9,728	24	+20	276	59	12							
	1 10,705	22	+20	242	48	9	11083	1 21,913	178	+12	40	5	2
	1 11,790	21	+20	160	45	8		1 22,695	178	+13	48	2	2
	1 12,722	25	+19	94	15	5		1 23,729	180	+12	24	1	1
	1 13,589	28	+21	145	5	2		1 24,701	180	+12	32	1	1
	1 14,606	28	+22	24	1	1							
11077	1 6,598	352	+1	291	2	1	11084	1 29,596	110	+9	12	1	1
	1 8,945	353	+3	182	1	1							
	1 9,728	354	+2	170	1	1	11085	2 2,604	353	+4	48	1	1
	1 10,705	354	+2	170	2	1		2 3,840	352	+5	73	2	1
	1 11,790	353	+3	161	2	2		2 4,724	354	+4	48	2	1
	1 12,722	351	+3	151	2	2		2 5,622	353	+3	48	2	1
	1 13,589	354	+4	194	2	1		2 6,618	353	+3	48	1	1
	1 14,606	351	+4	145	2	2		2 7,862	354	+4	32	1	1
	1 15,624	353	+3	158	3	1		2 8,710	354	+3	24	1	1
	1 16,598	353	+3	170	2	1		2 9,597	353	+4	24	1	1
	1 17,749	353	+2	242	1	1		2 10,577	354	+4	24	1	1
	1 18,736	353	+3	48	1	1		2 11,740	354	+3	16	4	1
11078	1 8,945	321	+10	44	4	2	11086	2 7,862	315	-6	24	1	1
11079	1 8,945	317	-6	32	3	1	11087	2 9,597	334	+3	24	1	1
	1 9,728	319	-7	24	3	1		2 11,740	334	+5	12	2	1
11080	1 8,945	306	-5	145	2	1	11088	2 9,597	320	-8	12	1	1
	1 9,728	309	-7	363	9	3							
	1 10,705	308	-7	507	16	5	11090	3 4,715	45	-7	36	4	2
	1 11,790	309	-7	345	22	4							
	1 12,722	309	-7	331	12	3	11093	3 13,619	330	+4	24	1	1
	1 13,589	311	-7	351	16	3							
	1 14,606	310	-7	460	19	5	11094	3 14,594	250	-11	30	3	2
	1 15,624	313	-8	145	6	2							
	1 16,598	313	-8	182	5	2	11095	3 18,688	125	-15	193	2	2
	1 17,749	313	-8	85	9	3		3 19,618	129	-16	109	5	5
	1 18,736	314	-9	48	2	1		3 20,600	132	-16	48	1	1
	1 19,734	314	-7	97	2	1		3 21,721	133	-17	103	5	2
	1 20,665	316	-6	145	1	1		3 22,753	132	-15	64	1	1
11081	1 10,705	291	-11	121	1	1		3 23,662	134	-15	36	2	1
	1 11,790	289	-10	139	2	2		3 24,692	132	-15	48	2	1
	1 12,722	290	-10	145	1	1		3 25,664	131	-15	36	1	1
	1 13,589	291	-11	170	7	1	11097	3 27,608	85	+13	28	4	2
	1 14,606	291	-11	109	1	1		3 28,637	82	+13	12	3	1
	1 15,624	291	-11	145	5	1		3 30,620	86	+14	60	4	2
	1 16,598	290	-11	145	4	1		3 31,585	83	+16	60	2	2
	1 17,749	291	-10	127	7	2							
	1 18,736	290	-11	109	3	1	11098	3 27,608	15	+11	145	1	1
	1 19,734	291	-10	109	1	1		3 28,637	15	+9	170	2	1
	1 20,665	291	-9	97	1	1		3 30,620	17	+11	103	5	2
	1 21,913	292	-10	73	2	1							
	1 22,695	291	-8	97	1	1							
11082	1 15,624	284	-10	40	4	2							

TABLE IIIa NUMBERED GROUP SUMMARY

No.	Date	<i>L</i>	φ	<i>A</i>	<i>s</i>	<i>p</i>	No.	Date	<i>L</i>	φ	<i>A</i>	<i>s</i>	<i>p</i>
		°	°						°	°			
	3 31.585	17	+11	61	2	1		4 27.582	30	+12	1136	26	11
	4 1.680	19	+11	85	4	2		4 28.592	31	+12	1196	16	8
	4 2.587	18	+12	12	1	1		4 29.580	31	+12	1187	21	6
	4 3.590	20	+12	12	2	1		4 30.762	34	+10	1381	24	10
	4 4.582	20	+12	12	1	1		5 1.570	32	+14	1194	15	9
	4 5.683	24	+ 9	12	1	1		5 2.651	33	+14	835	4	4
								5 3.650	34	+13	1066	4	3
11099	3 27.608	3	- 7	24	1	1							
	3 28.637	6	- 9	48	2	1	11108	4 25.657	15	- 5	28	2	2
	3 30.620	9	- 9	48	4	1		4 27.582	25	- 7	12	2	2
	3 31.585	9	- 9	24	2	1							
	4 1.680	3	- 9	36	1	1	11109	4 23.587	15	-10	48	1	1
	4 2.587	3	- 8	96	10	4		4 24.641	12	- 8	48	2	1
	4 3.590	4	- 9	52	5	2		4 25.657	12	- 8	32	2	1
	4 4.582	8	- 8	12	1	1		4 26.685	13	- 9	48	2	1
								4 27.582	15	-10	12	2	2
11100	3 30.620	346	- 1	352	3	2							
	3 31.585	343	- 1	472	13	5	11110	4 24.641	3	- 8	32	1	1
	4 1.680	346	+ 1	435	12	6		4 25.657	1	- 8	24	1	1
	4 2.587	345	+ 1	451	16	6		4 27.582	2	-10	6	1	1
	4 3.590	344	+ 2	266	2	2							
	4 4.582	343	0	206	3	2	11111	4 26.685	342	+ 4	194	1	1
	4 5.683	343	+ 2	145	1	1		4 27.582	342	+ 2	194	1	1
	4 6.685	342	+ 2	121	1	1		4 28.592	341	+ 2	206	5	2
	4 7.685	343	+ 2	121	1	1		4 29.580	342	+ 3	194	1	1
	4 8.671	344	+ 2	121	1	1		4 30.762	344	+ 5	194	1	1
	4 9.657	345	+ 3	97	1	1		5 1.570	343	+ 4	170	1	1
	4 10.667	343	+ 3	97	1	1		5 2.651	344	+ 5	158	1	1
								5 3.650	345	+ 5	170	1	1
11101	4 3.590	336	+ 4	48	2	2		5 4.674	344	+ 4	85	1	1
	4 4.582	337	+ 4	52	6	3		5 5.742	345	+ 3	85	1	1
	4 5.683	336	+ 4	48	3	2		5 6.605	344	+ 5	121	1	1
	4 6.685	336	+ 4	42	7	4		5 7.578	345	+ 4	97	1	1
	4 7.685	337	+ 3	127	15	3	11113	5 2.651	292	+ 2	16	1	1
	4 8.671	337	+ 4	351	5	3							
	4 9.657	338	+ 5	351	4	3	11117	5 17.597	180	+13	40	3	2
	4 10.667	338	+ 5	364	5	2		5 18.643	181	+12	6	1	1
	4 11.669	340	+ 2	291	1	1							
11102	4 3.590	348	+ 2	163	10	4	11118	5 19.586	34	+13	291	5	2
	4 4.582	350	+ 4	269	15	7		5 20.542	36	+ 8	267	2	2
	4 5.683	349	+ 4	218	7	3		5 21.589	38	+ 9	218	3	2
	4 6.685	350	+ 4	86	7	5		5 22.787	39	+12	145	2	2
	4 7.685	351	+ 4	96	7	5		5 23.628	39	+11	157	2	2
11103	4 4.582	12	+13	12	1	1		5 24.803	40	+12	181	2	2
11104	4 7.685	3	- 9	48	5	2		5 26.637	39	+12	121	1	1
11106	4 18.608	108	+ 8	6	4	1		5 27.517	37	+14	181	6	3
								5 28.542	38	+14	103	2	2
11107	4 21.599	33	+12	145	1	1		5 29.577	37	+16	97	1	1
	4 22.594	30	+10	242	1	1		5 30.616	38	+15	73	1	1
	4 23.587	29	+ 9	848	7	4	11119	5 28.542	333	- 5	34	4	3
	4 24.641	29	+10	921	13	5							
	4 25.657	30	+11	713	13	9	11120	5 29.577	343	+ 5	18	4	2
	4 26.685	32	+11	691	8	5		5 30.616	346	+ 5	109	5	2
								5 31.561	346	+ 4	12	2	2

TABLE IIIa NUMBERED GROUP SUMMARY

No.	Date	L	φ	A	s	p	No.	Date	L	φ	A	s	p
		$^{\circ}$	$^{\circ}$						$^{\circ}$	$^{\circ}$			
11121	6 2,566	327	+13	40	7	4		7 3,594	187	-17	12	1	1
11122	6 2,566	255	-13	425	7	3	11132	7 9,635	70	-9	485	1	1
	6 3,574	256	-14	400	8	5		7 10,622	70	-11	485	2	2
	6 4,603	255	-14	343	7	4		7 11,641	71	-10	436	3	3
	6 5,710	255	-14	339	3	2		7 12,587	71	-12	297	10	3
	6 6,719	255	-15	327	6	3		7 13,628	73	-11	339	3	3
	6 7,584	254	-15	355	6	3		7 14,630	74	-10	364	9	5
	6 8,557	254	-15	296	11	6		7 15,631	73	-11	413	5	5
	6 9,710	253	-16	315	3	2		7 16,812	69	-11	233	7	6
	6 10,562	254	-15	266	2	2		7 17,635	75	-9	190	5	4
	6 11,564	250	-15	73	1	1		7 18,676	74	-9	170	3	3
								7 19,567	77	-8	113	2	2
								7 20,631	78	-8	120	4	3
11123	6 2,566	234	-14	12	1	1							
11124	6 3,574	224	+15	28	6	3	11133	7 10,622	149	+7	12	1	1
	6 4,603	225	+16	316	24	7							
	6 5,710	223	+15	265	14	4	11134	7 14,630	131	-12	61	1	1
	6 6,719	224	+15	252	10	4							
	6 7,584	224	+16	193	16	5	11135	7 18,676	62	+11	24	1	1
	6 8,557	224	+15	127	7	3							
	6 9,710	225	+15	194	3	3	11136	7 21,626	3	+5	6	1	1
	6 10,562	224	+15	168	11	5							
	6 11,564	225	+16	22	4	2	11138	8 2,676	119	+15	97	1	1
	6 12,678	230	+17	24	1	1		8 3,670	122	+16	181	4	2
11126	6 13,708	54	+9	73	1	1		8 4,576	124	+17	113	10	4
	6 14,569	48	+9	447	11	6		8 5,574	123	+14	44	3	3
	6 15,560	51	+8	300	17	6		8 6,792	120	+17	16	1	1
	6 16,657	50	+8	326	20	7		8 7,606	129	+15	44	3	3
	6 18,806	55	+8	206	4	3		8 8,807	124	+15	12	1	1
	6 19,689	54	+8	182	3	3		8 9,717	127	+16	6	1	1
	6 20,642	54	+9	145	6	3		8 10,631	128	+16	114	8	5
	6 21,671	55	+9	24	2	2		8 11,640	129	+16	242	5	2
11127	6 14,569	150	-2	6	1	1		8 12,733	128	+15	121	2	2
								8 13,602	133	+16	24	1	1
11128	6 14,569	132	+15	6	2	1	11139	8 8,807	118	+15	40	3	3
	6 15,560	132	+16	30	7	4		8 9,717	118	+14	84	11	5
	6 16,657	134	+16	24	4	2		8 10,631	117	+16	145	7	5
11129	6 19,689	342	+13	145	3	1		8 11,640	119	+16	153	2	2
	6 20,642	337	+11	169	2	2		8 12,733	118	+16	97	3	2
	6 21,671	337	+14	169	2	2		8 13,602	121	+15	12	3	1
	6 22,587	338	+11	127	5	3		8 14,607	126	+16	12	1	1
	6 23,590	342	+11	121	3	2	11140	8 8,807	31	+11	194	1	1
	6 24,597	341	+11	97	4	3		8 9,717	34	+10	145	1	1
	6 25,581	340	+12	84	6	4		8 10,631	34	+9	170	1	1
	6 26,600	344	+14	12	2	2		8 11,640	34	+9	170	1	1
11130	6 26,600	258	-17	48	1	1		8 12,733	34	+10	133	1	1
	6 27,656	258	-15	36	3	2		8 13,602	34	+10	137	4	2
	6 28,693	259	-16	24	1	1		8 14,607	36	+9	97	1	1
	6 29,579	258	-16	12	1	1		8 15,637	34	+9	161	3	2
	6 30,597	259	-16	12	1	1		8 16,669	35	+9	97	1	1
11131	7 2,592	190	-17	16	1	1		8 17,792	35	+8	73	1	1
								8 18,678	35	+8	48	1	1
								8 19,701	35	+7	24	1	1

TABLE IIIa NUMBERED GROUP SUMMARY

No.	Date	L	φ	A	s	p	No.	Date	L	φ	A	s	p
		°	°						°	°			
11141	8 10.631	143	+12	32	3	2	11150	9 8.631	136	+10	24	2	1
	8 11.640	145	+11	24	1	1		9 9.645	134	+11	12	1	1
11142	8 11.640	4	+12	291	3	2	11151	9 8.631	31	+12	16	2	1
	8 12.733	3	+13	605	5	4		9 12.760	33	+12	56	2	2
	8 13.602	3	+12	688	21	11	11152	9 10.634	13	+17	109	3	2
	8 14.607	4	+13	554	52	9		9 11.705	14	+16	32	1	1
	8 15.637	4	+12	755	17	10		9 12.760	15	+14	16	1	1
	8 16.669	4	+11	835	13	7		9 13.645	12	+16	12	1	1
	8 17.792	3	+12	496	7	6	11154	9 12.760	299	-11	24	1	1
	8 18.678	3	+11	430	4	4		9 13.645	302	-12	121	3	3
	8 19.701	10	+11	412	1	1		9 14.637	303	-12	189	12	5
	8 20.637	9	+11	412	1	1		9 15.628	302	-12	132	8	4
	8 21.631	12	+11	412	1	1		9 16.644	303	-12	242	10	6
	8 22.633	11	+11	388	1	1		9 17.672	304	-13	162	6	3
11143	8 11.640	8	- 6	97	1	1		9 18.639	304	-13	60	2	2
	8 12.733	2	- 5	109	3	2		9 19.614	302	-13	30	6	3
	8 13.602	1	- 5	133	3	3		9 20.694	303	-14	12	1	1
	8 14.607	5	- 5	97	8	4		9 21.573	302	-13	12	1	1
	8 15.637	8	- 5	48	1	1	11155	9 14.637	283	- 8	6	2	1
	8 16.669	8	- 5	61	1	1		9 15.628	280	- 9	12	1	1
	8 17.792	9	- 5	36	1	1		9 16.644	279	- 9	12	1	1
	8 18.678	9	- 6	36	1	1		9 17.672	281	-11	12	1	1
	8 19.701	9	- 6	24	1	1		9 18.639	282	-11	12	2	1
	8 20.637	9	- 7	16	1	1		9 19.614	282	-11	12	2	2
	8 22.633	9	- 6	24	1	1		*9 20.694	287	-10	24	2	1
11145	8 23.580	205	- 9	12	1	1	11156	9 14.637	50	+12	6	1	1
11146	9 1.633	126	+13	12	2	2	11157	9 15.628	262	+ 5	97	1	1
	9 2.640	131	+13	24	2	2		9 16.644	263	+ 6	97	1	1
	9 3.676	131	+12	6	1	1		9 17.672	265	+ 6	97	1	1
	9 4.635	130	+12	6	1	1		9 18.639	264	+ 4	73	1	1
	9 5.660	130	+11	24	3	3		9 19.614	266	+ 7	97	1	1
	9 6.611	129	+13	6	2	1		9 20.694	265	+ 6	73	2	1
11147	9 1.633	114	+18	6	1	1		9 21.573	265	+ 6	73	1	1
11148	9 6.611	13	- 5	145	1	1		9 22.631	266	+ 7	73	1	1
	9 7.635	18	- 5	12	2	1		9 23.646	267	+ 7	61	1	1
11149	9 6.611	9	+14	194	1	1		9 24.680	266	+ 6	73	1	1
	9 7.635	9	+13	315	1	1		9 25.704	267	+ 6	24	1	1
	9 8.631	12	+13	194	1	1		9 26.601	267	+ 7	24	1	1
	9 9.645	10	+14	242	1	1	11158	9 24.680	145	+ 8	36	2	1
	9 10.634	11	+13	242	1	1		9 25.704	144	+ 9	24	2	2
	9 11.705	11	+12	194	1	1		9 26.601	145	+ 7	12	1	1
	9 12.760	11	+13	194	1	1		9 27.707	144	+ 9	40	2	2
	9 13.645	11	+12	218	1	1	11160	10 3.708	139	-14	18	5	2
	9 14.637	13	+12	218	1	1		10 4.733	138	-16	24	2	1
	9 15.628	13	+12	194	1	1	11161	10 5.656	26	- 7	6	1	1
	9 16.644	11	+12	194	1	1							
	9 17.672	12	+12	194	1	1							
	9 18.639	13	+14	145	1	1							
	9 19.614	8	+12	97	1	1							

TABLE IIIa NUMBERED GROUP SUMMARY

No.	Date	L	φ	A	s	p	No.	Date	L	φ	A	s	p
		°	°						°	°			
	10 6.677	29	- 6	163	8	4		11 3.597	123	+17	24	1	1
	10 7.658	29	- 5	89	5	3							
	10 8.750	29	- 6	121	3	2							
	10 9.733	32	- 6	60	4	2	11165	10 31.670	24	- 5	73	4	1
	10 11.780	29	- 7	12	1	1		11 1.728	22	- 5	97	5	3
	10 12.572	33	- 7	28	2	2		11 2.633	25	- 6	61	2	1
	10 13.611	34	- 8	22	2	2		11 3.597	25	- 6	48	1	1
								11 4.664	21	- 5	16	1	1
								11 5.597	22	- 5	16	1	1
11162	10 12.572	353	- 9	18	3	2		11 6.717	23	- 6	18	3	3
	10 13.611	351	- 8	149	5	4							
	10 14.616	351	- 9	318	16	7	11166	12 6.733	30	+ 3	22	6	2
	10 15.625	353	- 9	509	16	8		12 7.669	29	+ 1	24	1	1
	10 16.625	355	- 9	218	4	4		12 8.662	31	+ 2	48	1	1
	10 17.602	353	- 8	103	2	2							
11163	10 23.572	176	- 6	18	2	2	11168	12 24.587	64	- 7	36	1	1
								12 25.708	68	- 8	12	2	1
11164	10 26.602	123	+15	36	3	2		12 26.808	69	- 7	60	7	5
	10 27.593	124	+15	54	2	2		12 28.717	69	-10	64	6	5
	10 28.747	125	+15	18	2	2		12 29.660	72	- 6	34	5	3
								12 30.717	72	- 9	12	2	2

TABLE IIIb UNNUMBERED GROUP SUMMARY

Date	L	φ	A	s	p	Date	L	φ	A	s	p
		°	°					°	°		
1 28.822	106	+ 7	6	1	1	5 5.742	359	+ 4	6	1	1
1 29.596	145	+ 5	6	2	1	9 7.635	145	+15	24	1	1
1 30.608	101	+15	12	1	1	10 18.740	197	+11	6	1	1
2 4.724	111	+10	6	1	1	11 3.597	354	-12	6	1	1
3 19.618	212	+ 2	6	1	1	11 6.717	30	- 8	12	2	1
3 27.608	63	+ 3	6	1	1	11 25.824	126	+ 2	28	2	2
5 2.651	358	- 9	6	1	1	11 25.824	47	- 5	24	1	1
						12 31.563	317	+25	36	1	1

TABLE IV RECURRENT GROUPS

Group	Recurrence of	Group	Recurrence of
11081	11068	11118	11107
11085	11077	11130	11122
11111	11101	11149	11142

Erratum

Circular	Page	Date	Item	For	Read
4	13	July 13, 1948	L ₀	63	83

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